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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,088	10/06/2003	Masayuki Nakayasu	0425-1082P	4496

2292 7590 02/12/2007  
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FALLS CHURCH, VA 22040-0747

EXAMINER
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GOODEN JR, BARRY J

ART UNIT	PAPER NUMBER
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3616

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/12/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/12/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

**Office Action Summary**

Application No.

10/678,088

Applicant(s)

NAKAYASU ET AL.

Examiner

Barry J. Gooden Jr.

Art Unit

3616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 9-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4, 9, 11/1-15/1 and 16-19 is/are allowed.
- 6) ☒ Claim(s) 5, 6, 10 and 11/10-15/10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. This office action is in response to the amendment filed November 16, 2006. Currently, claims 1-6 and 9-19 are pending. Claims 1, 5, and 6 are currently amended; Claims 7 and 8 remain canceled; Claims 2-4 and 9-19 are as previously presented.

***Claim Rejections - 35 USC § 102***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Nanbu et al., US Patent 6,676,157 B2.

In regards to claims 5 and 6, Nanbu et al. shows an inflator comprising:

a cylindrical inflator housing (10) which is closed at one end (right side of Figure 4) thereof and opened at the other end (14), and in which a pressurized gas is charged; and,

a diffuser portion (40) connected to an opening (14) of the inflator housing (10), and having a gas discharge port (Reference is made to Figure 4) therein;

a rupturable plate that closes at least one portion of a gas discharge passage, the gas discharge passage extending from the inflator housing to the gas discharge port of the diffuser portion;

an igniter (300), provided spaced apart from the rupturable plate (16) prior to an activation of the igniter (300) for rupturing the rupturable plate (16) disposed in the diffuser portion (40) such that an axial direction of the inflator housing (10) is orthogonal to an axial direction of the igniter (300); and,

means (passage) for directing a rupturing energy generated by activation of the igniter (300), in a direction that exactly opposes the rupturable plate (16) to rupture the rupturable plate (16);

wherein said means is a guiding passage, disposed inside the diffuser portion, for guiding the rupturing energy discharged from the igniter (300) to the rupturable plate (16) formed in the diffuser portion (40), and the rupturing energy is guided to a central portion of the rupturable plate (16) or a portion thereof in the vicinity of the central portion by action of the guiding passage (Reference is made to Figure 4);

Art Unit: 3616

wherein the guiding passage is defined by a cap, which surrounds at least the igniting portion of the igniter (300) and is disposed in a direction orthogonal to the axial direction of the inflator housing (10), and a hole which is provided at a position, on a side face of the cap, which exactly opposes the rupturable plate (16);

wherein the pressurized gas is charged in a single space (12) defined by the cylindrical inflator housing (10) and the diffuser portion (40);

further comprising: a filter (42) which catches fragments of the rupturable plate (16) being disposed in the gas discharge passage extending from the rupturable plate (16) to the gas discharge port (See Figure 4).

4. Claims 10-13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Horton et al., US Patent 6,629,703 B2.

In regards to claims 10-13 and 15, Horton et al. show all of the claimed elements including an inflator comprising:

a cylindrical inflator housing (10) which is closed at one end (12) thereof and opened at the other end (18) and in which (11) a pressurized gas is charged;

a diffuser portion (30,31) which is connected to an opening portion (19) of the inflator housing (10) and having a gas discharge port;

a gas discharge passage extending from the inflator housing (10) to the gas discharge port of the diffuser portion (30,31), at least one portion of the gas discharge passage being closed by a rupturable plate (17);

an igniter (3), for rupturing the rupturable plate (17), disposed in the diffuser portion (30,31), such that the axial direction (A) of the inflator housing (10) and the axial direction (C) of the inflator (3) obliquely cross with each other, the igniter (3) generating a rupturing energy acting in a direction oblique to the rupturable plate (17) to rupture the rupturable plate (17);

further comprising: a diffuser tube (32), having a second gas discharge port, connected to the gas discharge port of the diffuser portion (30,31);

Art Unit: 3616

wherein the diffuser tube (32) is arranged such that the diffuser tube (32) is coaxial to the inflator housing (10) or the central axis of the inflator housing (10) and the central axis of the diffuser tube (32) are parallel to each other (Reference is made to Figures 3 and 4); and,

wherein the diffuser tube (32) has a plurality of second gas discharge ports in a peripheral face thereof and the plurality of second gas discharge ports are provided circumferentially at equal intervals (Reference is made to Figure 4).

***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 14/10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horton et al., in view of Nanbu.

In regards to claim 14/10, Horton et al. show all of the claimed elements except for a filter being disposed in a diffuser tube.

Nanbu teaches a filter (42) which catches fragments of the rupturable plate (16) being disposed in a gas discharge passage.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the inflator of Horton et al. in view of the teachings of Nanbu to include a filter so as to

Art Unit: 3616

provide a secure guard against pieces of the rupturable plate entering the airbag cushion or the air which an occupant may breathe.

In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to locate the filter within the diffuser tube of Horton et al. so as to catch fragments of the rupturable plate (20b), since it has been held that rearranging parts of an invention involves only routine skill in the art.

***Allowable Subject Matter***

8. Claims 1-4, 9, 11/1-15/1, and 16-19 are allowed.

***Response to Arguments***

9. Applicant's arguments filed November 16, 2006 have been fully considered but they are not persuasive.

With respect to the applicant's assertion that the guiding passage of Nanbu is not disposed within the diffuser portion, examiner maintains the guiding passage of Nanbu is shown within the diffuser portion (Reference is made to Figure 4).

With respect to Horton et al., examiner maintains the rejection is proper. The reference clearly anticipates the claim. Anticipation does not require each element to be listed; however, Horton et al. readily shows all of the elements, including an igniter supporting portion (Reference is made to Figure 4).

***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action


Art Unit: 3616

is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

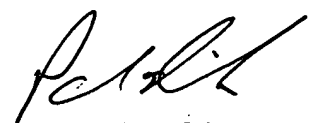
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry J. Gooden Jr. whose telephone number is (571) 272-5135. The examiner can normally be reached on Monday-Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 2/7/07  
Barry J. Gooden Jr.  
Examiner  
Art Unit 3616

BJG

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PAUL N. DICKSON  
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